

# Hot Wheels Advanced Play

Research Synthesis

Documentation

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# Context

## Overview

Mattel's Chief Design Officer expresses, *"So, the idea that we're a challenger brand came naturally. Challenge is a play value that's not defined by gender. Challenge is something that is open to everyone – everybody experiences it. And frankly, the more that we encourage our kids to embrace the growth mindset, embrace challenge, the better off they are in life, not just play."*

Hot Wheels is built on the mission of instilling a challenger spirit and embracing qualities like speed, skills, tactic and teamwork. With technology's prevalence in childhoods nowadays, Hot Wheels is making strides to ensure that they stay on track. Hot Wheel's Advanced Play brings a whole new way to play with Hot Wheels. With recent products such as Augmoto™ - an immersive augmented reality racing track + app and iD™ - a connected mixed play experience with a Smart Track, Hot Wheels is continuing to innovate in the toy space to match kids' heightened expectations of what a toy can be.

Mattel's Hot Wheels Advanced Play group then approached our team to find and design solutions to better attract kids above the age of 8. Hot Wheels have identified this age group as their target audience for this project. Before our research design process began, Mattel relayed their findings that in general, kids over the age of 10 years old aren't engaging with toys as much as they were before this point. It marks a transition period for these kids right before they begin Middle School. Where do we come in? We see this as an opportunity for our client Hot Wheels to reignite engagement for these kids especially when it comes to such an iconic brand.

# Research Design Process

## Desk Research

We began our research at our desks, absorbing everything we could about children aged 8-10 and the toy landscape. We compiled a thorough history of Hot Wheels, including current perceptions of the brand. We also conducted a competitive analysis, focusing on the toys that children play instead of Hot Wheels. This broad research helped the team get into the right headspace to talk and ask questions to various stakeholders.

## Interview Prep

Before preparing to interact with stakeholders, we condensed our desk research and identified core themes. We then came up with list of important questions to ask both the children and the Hot Wheels designers at Mattel.

## Stakeholder Interviews

At Mattel HQ, we observed three focus group interviews. The stakeholders were: Boys 8-10, Girls 8-10, and Boys 11-13. While we were not able to ask the children question ourselves, a Mattel representative consolidated our questions and led the discussions.

## Stakeholder Interviews

Some of the questions that were asked that led us to recognize trends:

What do you like to do in your free time?

What do you like to do when you hang out with your friends?

Do you like to spend time outdoors? What do you do outside? Who are you with?

Do you like games?

What kind of games do you play?

Which are your favorites? Why?

Do you like toys?

What kind of toys do you play with?

Which are your favorites? Why?

How do/did you find out about new toys?

Have you played with Hot Wheels before?

Do you still play with Hot Wheels now?

How do you play with them?

Do your friends play with them? Do you play with them together?

Do you own them?

### **Would you rather:**

Games on device or physicals toys?

Toys as they are or build/take things apart?

Legos or Nerf Guns?

## Post-Interview Research

Our post interview research included research into various areas of developmental psychology and the existing toy landscape.

Part of our process included:

- Analyzing and consolidating research data
- Identifying pain problems for each stakeholder
- Identifying connections between various stakeholders
- Selecting a problem statement
- Utilizing knowledge of desk research and stakeholder pain points

## Post-Interview Research

We also did preliminary research on the cognitive effects of gendered toys because we wanted to qualify our strong reactions to the gendering of child play. Beyond our own experiences with gendered toys, what truths can we draw from science and medicine?

We found surprising macro claims from the Early Childhood Education Center at Eastern Connecticut University. Professors of early child development and psychology, Jeffrey Trawick-Smith and Judith Elaine Blakemore, run TIMPANI (Toys that Inspire Mindful Play and Nurture Imagination) to study children's relationships with their toys, which has been running for 9 years.

Specifically, TIMPANI "identifies toys that best engage children in intellectual, creative, social, and verbal interactions in preschool classrooms," and scores them accordingly.

This paragraph spoke to us the loudest:

*"What set the highest-scoring toys apart was that they prompted problem solving, social interaction, and creative expression in both boys and girls. Interestingly, toys that have traditionally been viewed as male oriented—construction toys and toy vehicles, for example—elicited the highest quality play among girls. So, try to set aside previous conceptions about what inspires male and female play and objectively observe toy effects to be sure boys and girls equally benefit from play materials."*

This charge was especially important to us as we confirmed our problem statement:

*"If you want to develop children's physical, cognitive, academic, musical, and artistic skills, toys that are not strongly gender-typed are more likely to do this"*  
<https://www.naeyc.org/resources/topics/play/gender-typed-toys>

# Problem Statement

Kids who feel excited about self-expression and world-building need community-centric activities but most toys prevent gender-equitable environments.

## **World-building →**

The process of constructing an imaginary world that can at times be associated with an entire fictional universe

## **Community-centric activities →**

Activities that promote collaboration, sharing and coordination

## **Gender-equitable environment →**

A place where boys and girls are able to come together as a community to play and create

# Key Stakeholders

## Mattel Focus Groups

We're focused on children who enjoy activities that promote self-expression and world-building. By observing three focus groups at Mattel, we were able to identify some needs of girls 8-10 and boys 8-13. Across all groups was a desire to play with their friends and also interact with toys that sparked their imagination.

### **Girls 8-10**

Girls 8-10 enjoyed "hanging out and talking" with friends, "board games," "racing Hot Wheels," mixing toy brands, "playing with lizards" and "drawing". All of these activities revealed young girls desires and needs. There was a mutual agreement by these girls that they enjoyed playing alone and with other people, competition because "when you win, you are happy and when you lose, you learn," toys that are seen by their friends as "boy-ish," but they would enjoy even more if they were colored "pink, purple and cotton candy" and also scented.

### **Boys 8-10**

Boys 8-10 enjoy "sports," video games, "coding in Unity," "creating videos with their toys", playing with "legos alone" and "nerf guns" with friends. Thus, boys 8-10 desire and need physical activity, building and adventuring with friends, creating and imagining, learning through technology, and participating in community based activity.

### **Boys 11-13**

Boys 11-13 like "creating stop motion animations," video games, watching and playing sports, science and computer classes, activities that help them unwind but



## Mattel Focus Groups

### Boys 11-13 (Continued)

also be active and playing legos alone. Thus, similarly to the other two groups, the boys enjoy community based activities, competition, utilizing their imagination with toys like Legos as a form of self-expression. However, with older boys it became clear that their larger needs were more in the realm of relaxation, independence and fitting in/being seen as cool.

From these insights we realized that kids have a common need for activities where they can express themselves, imagine, compete but do this in a collaborative community where they feel they fit in.

## Peripheral Stateholders

### Mattel & Hot Wheels

The more peripheral stakeholder are Mattel and Hot Wheels and these kids parents. Mattel and Hot Wheels gave us a presentation where they explained their needs and desires alongside those for ages 8-10. It became clear that the companies most prominent needs were increasing sales of Hot Wheels to kids "above the age of 10 who aren't engaging with toys as much," creating toys that serve the duality of this age group — "boundary & experimentation", "fun without technology & enhanced by technology", "individualism & community," "reinvigorating older kids interest in toys," making sure to maintain Mattel's social goal and Hot Wheels' mission.

### Parents

Meanwhile, parents' needs develop from their concern about their children's needs. That is, that kids are still kids — imagination and escaping the stresses of the world, kids are participating in activities that promote good morals and practices, girls are not becoming catty, boys are balancing technology with physical toys, kids are feeling independent and secure, kids enjoy spending time with friends and most importantly, that their kids are happy.

# Other Solutions to the Problem

From our research with the focus groups, we identified that other toys like Legos are more successful at creating a gender-equitable play space. Both boys 11-13 and girls 8-10 demonstrated enjoying to play with Legos in distinct settings, and due to similar reasons. Both genders were entertained by the myriad of possibilities that the building blocks allow, as they essentially give the children the ability to create a world of their own and integrate other toys/elements. They are drawn by the fact that Legos allow for a sense of customization, as creations can be entirely different every time. Both groups also said they enjoyed creating stories and a difference, however, is that the genders at times do play with Legos in distinct manners. While the girls talked about the toys primarily as a collective activity, many of the boys agreed that it was a toy that represented independent play to them.

# Initial Recommendations & Assumptions Approaching the Problem

Our problem statement ultimately focuses on gender-equitable environments to cultivate positive qualities in all genders. We do, however, still want to approach how we can take Hot Wheel's mission of promoting the "challenger spirit" and apply it to girls. We believe introducing healthy competition to girls at a young age can help change gendered stereotypes around female relationships, and that Mattel can positively impact that change.

## Follow-up Questions

Going forward we know we have to answer a few key questions in the areas of education, pressure and fear, gender-equitable environments, and perceptions. Better understanding those areas is our next step. To do this we will conduct more research on toy education and childhood developments. We hope to find answers to questions like:

Do girls feel pressure to play with toys that are considered "girly"?

Are girls 8+ afraid to play with traditionally "boy's toys" because they are afraid they won't fit in?

Was this out of fear of being "boy-ish" and "not fitting in" or do they really only play with boy toys because they have brothers and cousins?

## Follow-up Questions

Furthermore, we will also conduct interviews with parents and teachers to better understand their perceptions of gendered toys, as well as the way they see gender equitable environments fitting into their children's play. We hope to answer questions like:

Do Legos create as much gender-equitable environment as they seem to based on kids answers?

If so, how does LEGO help it create gender-equitable environments?

How have other brands been successful in creating gender equitable play environments?

By finding information on LEGO, we hope to develop a case study on how the gender-equitable environment LEGO or other toy brands created, if they truly have, have impacted sales and how creating Hot Wheels toys that do the same could impact sales for Mattel. After conducting more research, we will begin to ideate on potential solutions to the problem. Our initial approach to solving this problem is combining the idea of what already works for Hot Wheels, what works for toys like Legos and some original aspects based on our research and insights. As well as finding a way to get more girls interested in buying Hot Wheels. We think that young girls, 8-10 or possibly younger, are an under-served market for Hot Wheels.

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## Interviewees

Thank you to Mattel!

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# Iovine & Young High School

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# Context

## Overview

We were tasked with better understanding the high school landscape, specifically how it might embrace or change with an Irvine and Young High School. The Irvine Young Academy is an interdisciplinary major at the University of Southern California. The allow students to major or minor in the Arts, Technology and Business of Innovation with classes in entrepreneurship, graphic design, computer coding, and communication.

After its founding in 2013, the Academy has grown its offerings from a cohort model major program, to a minor option and an online graduate student course. The Academy's mission is to "nurture critical thinking and unbridled creativity," and leadership within this "education startup" was curious to see what their curriculum would look like at a high school level. To better understand the context of our potential solution, we interviewed a variety of stake holders from different high schools, did research on current entrepreneurship programs in high schools and pulled on data from past projects involving high school students.



# Research Design Process

## Desk Research

We began our research at our desks, absorbing everything we could about the high school landscape, both in the United States and internationally. We compiled a thorough overview of schools that excel in their respective categories - from art to liberal arts programs. We also studied the requirements of California Public High Schools, including current perceptions of the curriculum. Before preparing to interact with stakeholders, we condensed our desk research and identified core themes. This broad research helped the team get into the right headspace to talk and ask questions to various stakeholders.

## Interview Prep

Utilized research to come up with questions for recent high school graduates, high school students and high school administration & teachers.

## Stakeholder Interviews

We began by interviewing Lovine and Young freshmen, focusing on their high school experiences.

# Iovine & Young Interviews

We asked a wide range of questions based on conversation and responses to templated questions like:

Can you give me background about your high school?

What kind of high school did you go to?

How big was your high school?

Was it AP or IB?

What kind of classes did you take?

How large were your classes?

What were your elective options and schedule flexibility?

How did you find out about The Academy?

What made you apply?

What challenged you in high school?

How did you spend your free time in high school?

Were you involved in extracurriculars?

At what point (if any) did you realize a traditional education wasn't right for you?

Is there something you miss about a more traditional education that you wished to see in the Academy?

What has been the biggest shock coming to the Academy?

Is there anything you miss about your traditional high school education?

What about the Academy appealed to you as you were applying to colleges? Why?

Do you have more success in a smaller or a bigger setting?

Did location play a big role in your college decision?

How essential is technology in your learning process?

If you could abolish one thing from traditional education, what would it be and why?

How would you describe the group of peers who you studied with versus were in extracurriculars with?

Are there people you can think of at your high school who wouldn't benefit from a project based, hands on learning model?

What comes to mind when you think about high school?

What was your high school experience like?

What did you care about in high school? What motivated you?

Are those things consistent with what you care about now?

What did you learn in high school? Your answer can be or include things you learned outside of class.

What did success mean to you in high school?

What did your high school do really well?

What did your high school need to improve?

Are there any experiences from your high school that you wish other people understood?

What are your goals for this semester?

# Simi Valley Interviews

We interviewed a variety of teachers and administrators in the Simi Valley district. We focused on how learning how they build their curriculum, their own educational journey, how they ready their students for a career and challenges they face.

## **Background**

What do you teach/what is your role?

What does the average day look like for you?

Have you always been a teacher? What have you taught?

What was your motivation to get into education?

Did your education journey influence you?

Do you have an educational "role model" (pedagogue, scholar, etc) or a "model school" that you really like?

## **Administrative/Education System**

How do you feel about the resources that are provided to the teachers at your school?

What are some key issues you see with the current high education system?

How does your high school fit in within the other nearby schools?

What do you think is the most obsolete thing still present in current education (that shouldn't be)?

How do you feel about standardized testing/testing in general?

How do you know (besides possibly test scores) that your students have well comprehended the content?

## **Student Teacher Relationship**

Throughout your years as an educator, have you noticed major generational changes on how students apprehend knowledge?

How do you teach to a variety of skills and levels?

What is your biggest challenge in getting your students engaged on a topic?

Have you noticed that some of your students learn in different ways than others? What are some of these learning differences? How do you address each student's way of learning as a teacher?

What is it like making sure each student individually is getting a holistic education but also making sure they have the time and ability to pursue their interests and talents?

# DaVinci High School

We interviewed one student for 45 minutes at DaVinci RISE Academy in South Central Los Angeles. We focused on her holistic story and educational experience, her motivations before and after attending DaVinci RISE, and how RISE pedagogy and support systems help her construct her future.

\* Most students at DaVinci RISE have attended school inconsistently or have living/family/legal situations that have prevented or discouraged them from attending school on a regular basis. Therefore, we changed our questions in hopes of seeing the role of school in our student's life in general. This interview was also significantly slower than interviews we conducted with Simi Valley, as our interviewee was extremely shy, so this page lists fewer questions.

What are you learning about right now in each of your classes?

How does your learning format work? (pedagogy)

What do you like learning about most?

Can you describe the learning community at DaVinci High?

Can you describe your support system here?

How have you grown while you were here?

What are your ambitions? Where do you hope to go from here?

Why do you want to do that?

## Post Interview Research

Our post interview research included research into various areas of education such as Keeping Girls in STEM, Common Core State Standards and current career related resources for high schoolers.

Part of our process included:

- Analyzing and consolidating research data
- Identifying pain problems for each stakeholder
- Identifying connections between various stakeholders
- Selecting a problem statement
- Utilizing knowledge of desk research and stakeholder pain points

## Developing Problem Statement

We developed our problem statement by finding the complementing needs of teachers and students which was a need and desire for success and passion for the future. That is, students want to graduate being passionate about a path whether traditional or interdisciplinary and teachers want see their students graduation having had the opportunity in high school to explore and find that path.

# Problem Statement

A teacher who is enthusiastic about helping students find and pursue diverse career options needs to expose students to both creative potential and varied disciplines, but bureaucracy in the education system constrains the ways teachers can engage students in new paths.

## **Diverse Career Options** →

Career paths that fuse interdisciplinary subjects not just the traditional careers that have limited students to only focusing on one path

## **Bureaucracy** →

Decisions are being made by people who are not active in the classroom like teachers and high school administration

# Key Stakeholders

## Students

The key direct stakeholders to our problem statement are the teacher and the student. The student, worried about their future, wants to take advantage of High School to discover skills and how they can be applicable in future careers. Many of the students we spoke to identified a need and desire for “a career they were passionate about.” Students identified a variety of passions varied from traditional career paths like “doctors and nurses” and “writers.”

## Teachers

From here, we spoke to teachers who felt a need to unlock their potential through varied disciplines and creative exploration, while still teaching the required subjects. Bruce Nebens explained that “Career technical classes struggled with “a huge division between engineering and arts” and identified a need for classes with “fusion.” From our research we learned that, “in the next decade, 60% of jobs in the workforce will be new compared to today’s workforce.” When saying “new”, this statistic means that careers will no longer be limited to one field of study but the “fusion” that Nebens was talking about.

Therefore, the current Career Technical Education program is restrictive because it offers students classes that prepare them for jobs in health science, business, sales, finance, IT, STEM, manufacturing, logistics, hospitality, government, law, agriculture, teaching, construction, training and arts. In response to the current CTE courses, Bruce Nebens mentioned that to be at the “leading edge” of fused

## Teachers

career paths for students it is important that high schools have “interdisciplinary curriculums and classes that provide an important synergy.”

However, courses and curriculums must be approved by state Educational Systems through an extensive process. Furthermore, A-G courses in California, which includes a career preparatory elective, have to go through approval from both the UC and Cal state schools. Bruce Nebens explained to us that getting a course approved “is like a science class because you need to have a physical theory” and for the “career technical piece” your theory needs to be “strongly embedded with career skills”.

Rather than get new courses approved, because of the extensive process, Nebens take approved courses and “does what he wants and doesn’t follow the curriculum and no one knows.” He does this because the bureaucracy within these systems is just too much to deal with, and nothing happens quickly. Another teacher, Matthew Abbe, said that “there is too much oversight by people who aren’t even in the room that make you do your job in handcuffs so it is better to ask for forgiveness than permission.”

Teachers need time to develop a course plan. As Matt Guzzo says, teachers rarely “have enough time to reflect and develop their practice”. On top of that, administration wants to maintain transparency with the teachers so that teachers don’t feel as if they have to hide the positive changes they make to the curriculum.

## Peripheral Stakeholders

Families and the school administration are peripheral considerations. Families generally want their children to discover and unlock their abilities, making way for successful and financially viable professions in the future. School administrators do the actual finishing work: fulfilling governmental requirements for education and ensuring that core disciplines are being taught.



# Other Solutions to the Problem

After doing thorough research of the involved stakeholders, we began to gain a deeper understanding of what is currently being done within this educational space in terms of offering career exploration and encountering bureaucracy. Our primary interviews with Santa Susana High School's teachers and administrators informed us that their school offers an Academic and Career Exploration program for its students. It's an additional course that meets twice per week for 50 minutes per day. Typically, they assign assignments twice a month for this program.

## Common Core Initiative

In 2010, the Common Core State Standards Initiative began throughout the United States for students K-12. These standards are a clear set of shared goals and expectations for the knowledge and skills students need in English language arts and mathematics at each grade level so they can be prepared to succeed in college, career, and life. Common Core's college- and career-ready standard put this goal as a priority for teachers to add into their lessons. When implementing these standards, teachers face additional costs and a lack of funding.

Within Common Core, it's been "a constant struggle to sustain and implement New Jersey's funding equity mandates, a central problem with the Common Core is the complete absence of any similar credible plan to provide—or even to determine—the resources necessary to make every student 'college and career ready' as defined by the Common Core State Standards" (Karp). This anecdote gives context to the solutions that teachers have included in their own solutions. Career descriptions and resources fill the web and can be easily accessed at any point. Some teachers are turning to providing these resources or creating their own.

# Initial Recommendations & Assumptions Approaching the Problem

We've made broad statements about the career education landscape as well as the high schooler's headspace, based on interviews from students and teachers at very diverse high schools. It is also critical to understand the common High School bureaucracy, and which of its components most hinder teachers from fulfilling their need.

Crucial to deeply exploring individual narratives from these school will include gathering some information on the quantity and quality of resources offered and exposed to students, as well as a way to measure the impact of those resources. We're looking forward to investigating the varieties of and, we expect, career-exploration opportunities for students within and beyond the classroom. From there, we'll come up with a way to measure the values and limitations of those mechanics.

# References

## Interviewees

Principal: Matt Guzzo

Entrepreneurship and Self-Employment Teacher: David Jones

Assistant Director for Technical Program: Jerry Block

Academy Digital Graphics and Publication: Matthew Abbe

Honors + Robotics Engineering, Entrepreneurship and Financial Algebra 2: Bruce Nebens

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